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Dated

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THE PATENT OFFICE

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- 9 JUL 2004

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NEWPORT

09JUL04 E910111-1 D01682  
P01/7700 0.00-0415404.3 NONE

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## 1. Your reference

SOFT MOULDED FOUR WHEELS

- 9 JUL 2004

## 2. Patent application number

(The Patent Office will fill this part in)

0415404.3

3. Full name, address and postcode of the or of  
each applicant (underline all surnames)

LANDOR &amp; HAWA INTERNATIONAL

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8682429001

Patents ADP number (if you know it)

If the applicant is a corporate body, give the  
country/state of its incorporation

A British Company

## 4. Title of the invention

AN ARTICLE OF LUGGAGE

## 5. Name of your agent (if you have one)

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Patents ADP number (if you know it)

6692001

6. Priority: Complete this section if you are  
declaring priority from one or more earlier  
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Country

Priority application number  
(if you know it)Date of filing  
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this application is a divisional application or  
resulted from an entitlement dispute (see note 1)Number of earlier UK application  
(day / month / year)8. Is a Patents Form 7/77 (Statement of  
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Answer YES if:

- a) any applicant named in part 3 is not an inventor, or
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applicant, or
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Yes

**Patents Form 1/77**

9. Accompanying documents: A patent application must include a description of the invention. Not counting duplicates, please enter the number of pages of each item accompanying this form:

Continuation sheets of this form	None
Description	Eight
Claim(s)	None
Abstract	None
Drawing(s)	FIVE 4 + 4 figures

10. If you are also filing any of the following, state how many against each item.

Priority documents  
Translations of priority documents  
Statement of inventorship and right to grant of a patent (Patents Form 7/77)  
Request for a preliminary examination and search (Patents Form 9/77)  
Request for a substantive examination (Patents Form 10/77)

Any other documents (please specify) Five figures to drawings

11. I/We request the grant of a patent on the basis of this application.

Signature(s)

Date 7/7/04

12. Name, daytime telephone number and e-mail address, if any, of person to contact in the United Kingdom

Pat Russell-Rayner 01462 672538

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## AN ARTICLE OF LUGGAGE

This invention relates to the construction of luggage such as suitcases and/or trolley cases for use by travellers.

Such cases, can conveniently be considered as comprising two major types, the  
5 first the so-called soft case and the second the so-called hard or non-soft case.

Many constructions of such cases for use by travellers are known. These known constructions of both 'hard' and 'soft' cases are of varied form and not infrequently include carrying handle arrangements and at least a pair of wheels/rolls for facilitating the movement of the case by a user.

10 In addition, it is also known to provide cases incorporating a towing handle structure which is usually moveable between a user case towing position and a retracted stowage position.

The above mentioned 'hard' cases are regarded as being hard in the sense that the walls, top and bottom cannot be pierced by a blade or needle as is possible with  
15 soft case constructions.

Conventionally the so-called 'hard' cases incorporate a metal or plastics framework extending all round the internal perimeter of the case in such position as to provide structural strength to the case. Such frameworks can involve internal tongue and groove arrangements. In practice, in addition to such a framework known cases incorporate reinforcements at the top, base and corner sections. Such reinforcements can be formed from plywood, or P. E. Board  
20

The 'soft' case conventionally incorporates an internal framework of metal or appropriate plastics material extending around the total periphery of the associated case top and base/bottom sections which provides the means whereby the visual appearance of the case is obtained and also serves to support a soft outer covering. In addition, plywood or plastics material such as P. E. board re-enforcement at the case top, base, and corner sections may be incorporated.

Whilst the provision of an internal framework is a standard/common feature of 'soft' case construction it is known to avoid using the framework extending around the internal periphery of a 'soft' case and to provide instead plastics material i.e., P. E. side panels together with P. E. material base and back panels. These particular cases have become known as 'Box' construction or side panel cases.

It is an object of the invention to eliminate such frames and the need for such re-enforcement arrangements

Broadly, in accordance with a first aspect of the invention there is provided an article of luggage characterised by a 'soft' case construction including lid and base forming sections of such construction as to be shape wise self supporting in the absence of a perimeter frame and side, base or back panels whereby the form of the case is established and maintained by the moulded lid and base sections.

In accordance with a second aspect of the invention there is provided an article of luggage characterised by a 'soft' case construction including lid and base forming sections of such moulded form as to be shape wise self supporting in the absence of a perimeter frame and side, base or back panels whereby the form of the case is established and maintained by the moulded lid and base sections.

Preferably the article of luggage does not involve the use of corner supports and/or additional side panel forming boards.

Conveniently the article of luggage incorporates a carrying handle together with a towing handle and associated handling support wheels.

Preferably the article of luggage includes lid and base sections are moulded from a foamed plastics material such as EVA or expanded PVC

5 Conveniently, in accordance with an aspect of the invention the article of luggage includes a pair of castorable wheels on the lid section and a pair of castorable wheels on the base section, the four wheels being so positioned as to enable free standing support to the case.

10 In a preferred construction the lid and base sections are externally covered by fabric material shaped to conform closely to the external form of the lid and base sections.

15 In accordance with a further aspect of the invention there is provided a method of producing an article of luggage characterised by a 'soft' case construction characterised by the steps of moulding from a material exhibiting 'soft' case characteristics lid forming and base forming sections of such construction as to be shape wise self supporting in the absence of a perimeter frame and/or side, base or back panels whereby the form of the case is established and maintained by the moulded lid and base sections.

20 In accordance with a still further aspect of the invention there is provided a method of producing an article of luggage characterised by a 'soft' case construction characterised by the steps of moulding the lid and base forming sections from a foamed plastics material such that the sections incorporate at predetermined locations raised corrugations /recesses at locations at which the presence of such corrugations/recesses enhance the physical rigidity/strength of

the associated section

According to a further aspect of the invention a case construction incorporates a moulded lid forming section, a moulded base forming section with both said sections being moulded from a foamed plastics material such that the sections incorporate corrugations/recesses so positioned as to enhance rigidity of the mouldings.

5

Preferably the two moulded sections are connected together by a zip fastener arrangement adapted for enabling the hinging of the two sections with respect to each other and to provide opening and closing facility to the case.

10 For a better understanding of the invention and to show how to carry the same into effect reference will now be made to the accompanying drawings in which:-

Figure 1 illustrates a general oblique front view of a case incorporating the concepts of the invention;

15

Figure 2 illustrates a general oblique rear view of a case incorporating the concepts of the invention;

Figure 3 is a schematic fragmentary view illustrating details of the structure of the one end of a case illustrated in Figures 1 and 2;

Figure 3A illustrates schematically a detail of the luggage of Figure 3;

20 Figure 4 is a schematic fragmentary view illustrating details of the structure of the other end of a case illustrated in Figures 1 and 2;

Figure 4A illustrates schematically a detail of the luggage of Figure 3; and

Figure 5 illustrates a fragmentary portion of a modified article of luggage incorporating four castorable wheels.

Referring now to the drawings and more particularly to Figures 1 and 2 the case shown in Figure 1 can be regarded as incorporating lid and base sections 1, 2 respectively of a tray like form moulded from a foamed plastics material known as EVA. The sections 1 and 2 are externally covered by a fabric material shaped to conform closely to the external form of the lid and base sections.

The two sections are secured one to the other by a Zip fastener configuration 3 that provides a conventional Zip fastener type closure facility to the case.

As mentioned each such lid and base section is formed by moulding the sections from a foamed plastics material known as EVA.

To provide enhanced physical shape retaining physical strength to the surfaces of the moulded lid and base sections 1 and 2 and to avoid the formation of material wrinkles during the moulding operation corrugations/recesses 4 are provided at the corner regions 5 of the rims 6 of the associated section.

An opening 7 is provided at one end 8 of the base section 2 for receiving a towing handle arrangement 9 (Figure 2). In addition each of the corners 5 of the other end 10 of the base section 2 is provided with a profiled indentation 11 defining the location of suitcase handling wheels assemblies 12..

Referring now to Figure 3 this Figure very schematically illustrates in more detail the Zip fastener arrangement 3 and additionally more detail relating to the structure of the the suitcase at said other end 10 of the base and lid sections 1 and 2.

As shown the Zip fastener arrangement 3 is a double arrangement of Zip fasteners

including a first Zip fastener 3A including a first zipping portion 13 connected with the lid section 1 and extending substantially around the total perimeter of the lid section 1 and a second zipping portion 114 that is effectively connected to a first zipping portion 15 of the second Zip fastener 3B the latter having a second zipping portion 16 connected with and extending substantially around the total perimeter of the base section 2 between the hinging region (to be discussed hereinafter) of the lid and base sections 1 and 2.. The effective length of Zip fasteners 3A and 3B is such as to allow total closure of the Zip fastener arrangement 3 for closing the suitcase.

Piping 17 is provided in the join between the zip fastener portion 13 and the lid section 1, between the zipping portion 14 and the zipping portion 15, and between the zipping portion 16 and the base section 2.

This piping 19 is such as to provide stiffness to the operational runs of the associated Zip fasteners 3A and 3B thus to the composite Zip fastener arrangement 3. If desired this piping can be stiffened by an internally provided wire (not shown) extending lengthways of the piping.

In practice, a gusset (not shown) can be provided between the zipping portions 14 and 15 of the Zip fasteners 3A and 3B thereby enabling expansion of the storage volume of the suitcase.

The Figure 3 schematically illustrates mounting handling wheel assemblies 12. In practice, each of the indentations 11 is appropriately partially removed to accept and mount the wheel assemblies. In other words the wheel assemblies are fitted into openings provided in the corners of the case at the locations defined by the above mentioned indentations. If desired, the mounting of the wheel assemblies 12 to the base section 2 can incorporate in their mounting to the base section corner pieces (not shown) that serve to stiffen the mounting of the assemblies 12 to the base section 2 Furthermore, if desired, a bracing strip 18 indicated by

dashed lines in Figure 3 may be provided between the two wheel assemblies to enhance lateral stiffness between the wheel assemblies. The strip 18 is schematically illustrated in Figure 3A

5 In order to facilitate the stability of the suitcase when resting upright on the ground the suitcase is provided with a centrally located foot 19 on the base section I as shown and a further centrally located strip-like foot 20 on the lid section as shown. As will be appreciated the arrangement of the feet 19 and 20 prevents contact of the body of the case with the ground thereby assisting in protecting the appearance of the suitcase when in use.

10 In the embodiment of the case illustrated in the Figures a hinge facility is located at the end 10 of the case. This hinging facility can comprise a strip 21 of suitable plastics/fabric material. One end 22 of the strip 21 is located between the foot 19 and the material of the base section 1 whilst the other end of the strip (not shown) is connected internally to the lid section. It will be noted the strip 21 bridges the  
15 Zip fastener 3B and passes under the Zip fastener 3A. If desired the overall length of the hinge strip 21 can at least partially accommodate the volume expansion facility. If desired other modes of hinging could be adopted.

As has been mentioned the case incorporates a towing handle assembly 9. The assembly as can in Figure 1 and in more detail in Figure 4 a handle 22 located at the upper end of two side by side parallel bars 23 that telescope into a pair of parallel tubes (not shown) located in the interior of the base section 1.  
20

As is conventional the case is provided with a carrying handle 24 that in the embodiment of the case illustrated is provided at the end 8 of the base section 1.

The handle 24 can be mounted to the base section by any convenient means such as nuts and bolts (not shown). Furthermore, if desired a bracing strip 25 very  
25

schematically illustrated at by dashed lines may be provided in the interior of the base section to provide additional strength in the vicinity of the handle 23 The strip 24 is schematically illustrated in Figure 4A

In a modified structure as illustrated in figure 5 the case is provided with four castorable wheels 32, there being two provided upon the lid section 1 and two provided upon the base section 2.

With a view to accommodating the mounting of the wheels 32 the associated corners of the can be mounted as has been discussed in relation to the case of Figure 3.

It will be appreciated that the lid section would, if found necessary be suitably shape wise modified so as to enable the mounting of wheels 32 to the lid section

The relative dimensioning of the wheels 32 and the base and lid sections 1 and 2 would be such that the case can free stand upright when resting upon all four wheels. Since the wheels are castorable i.e., able to swivel through 360 degrees of arc the case can manually handled by a user in a variety of modes; including a conventional two wheel pulling mode, a two wheel side pulling mode for negotiating narrow aisles and other narrow spaces i.e., between persons, a two wheel side pushing mode for negotiating narrow aisles and other narrow spaces, a four wheel side pulling mode or a four wheel forward pushing mode.

The interior of the suitcase is provided with a lining that covers in the structural features located in the interior of the lid and bottom section 1 and 2.

VIEW A:  
END ON (PERSPECTIVE)

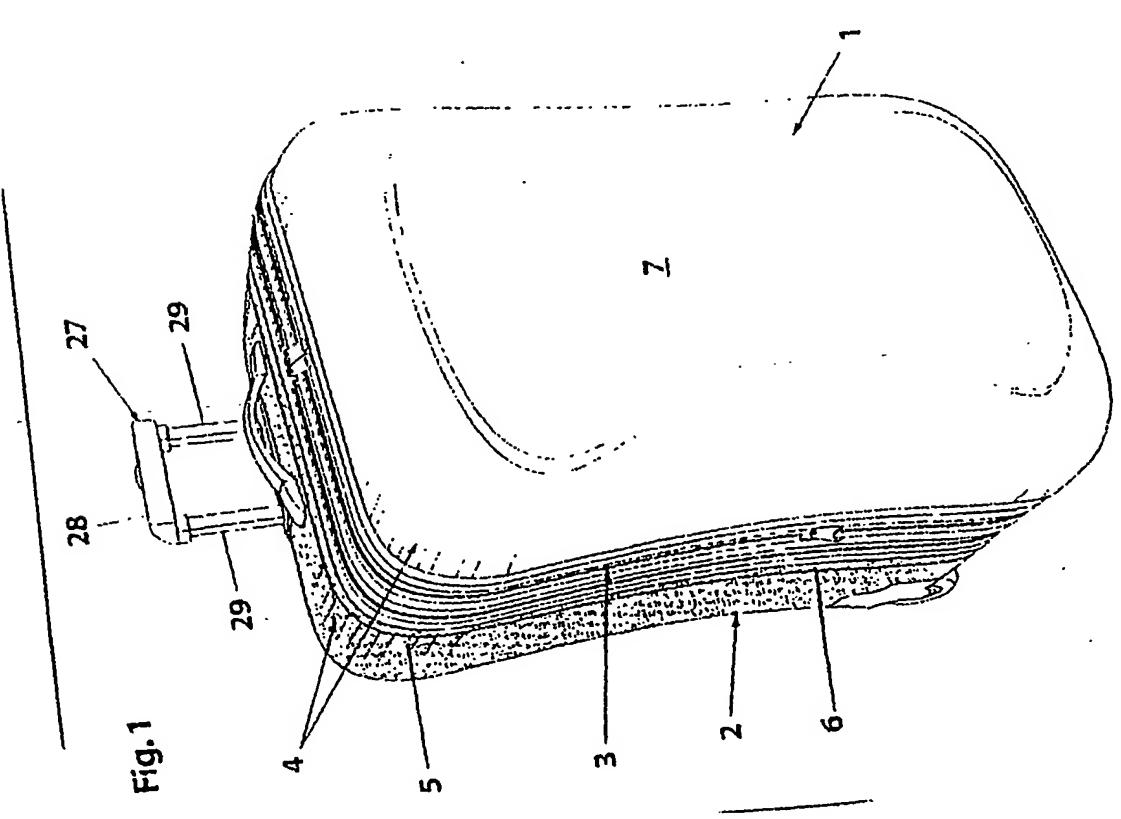
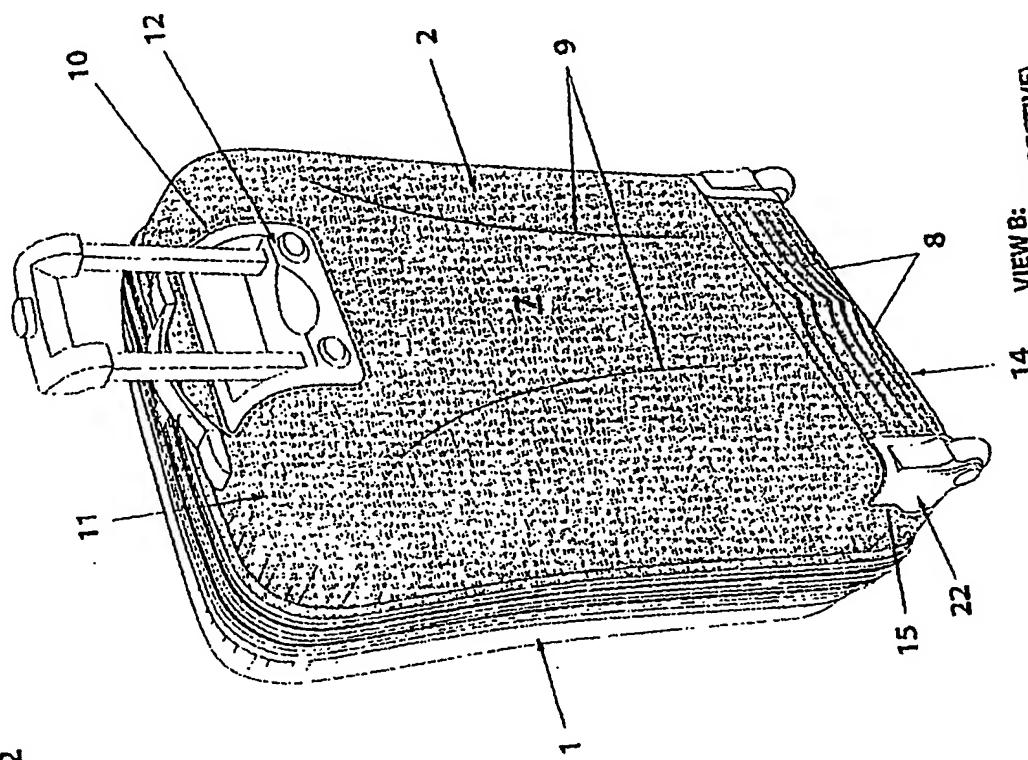


Fig. 1



VIEW B:  
BACK (PERSPECTIVE)

114

2/4

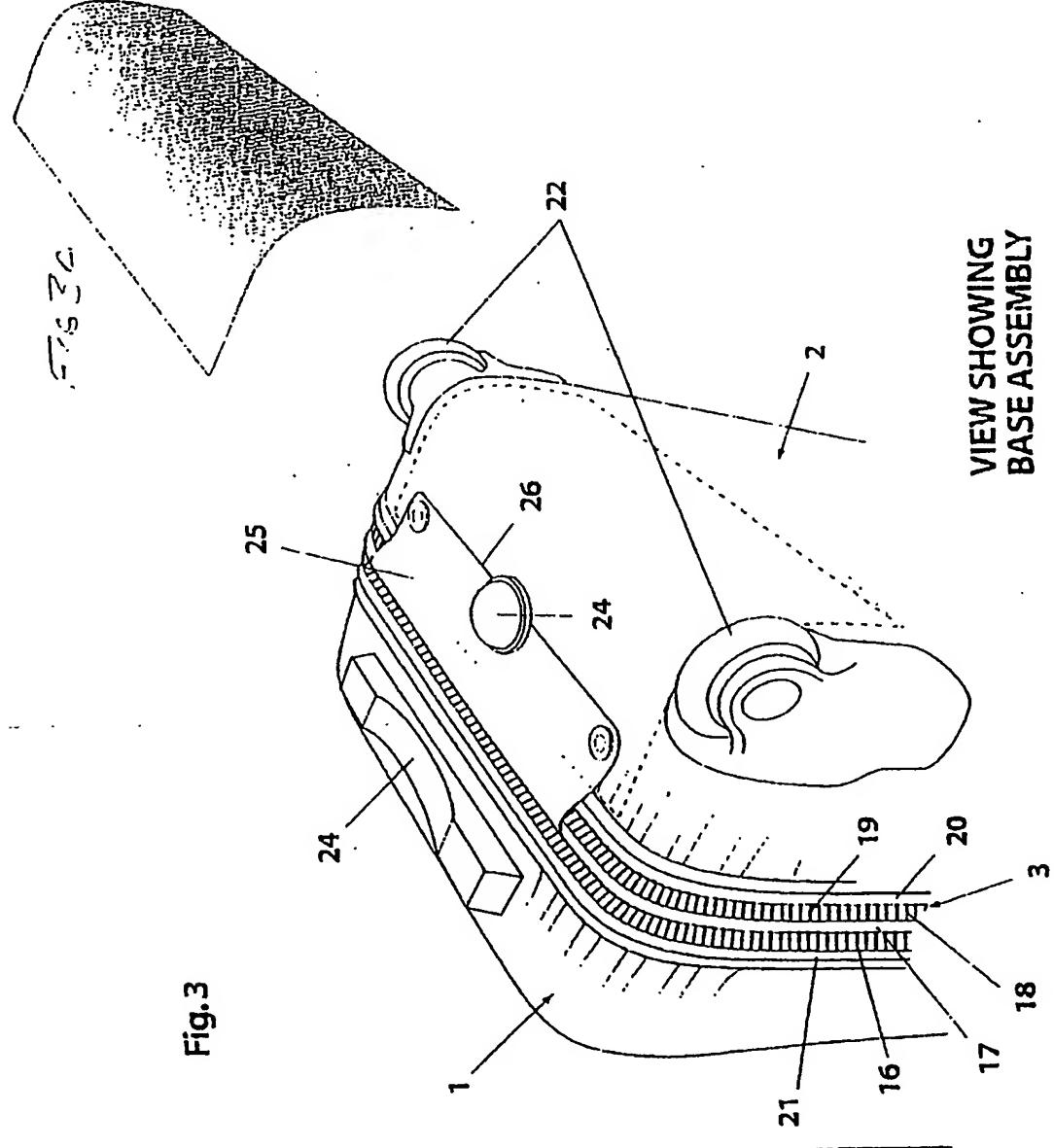


Fig.3

314

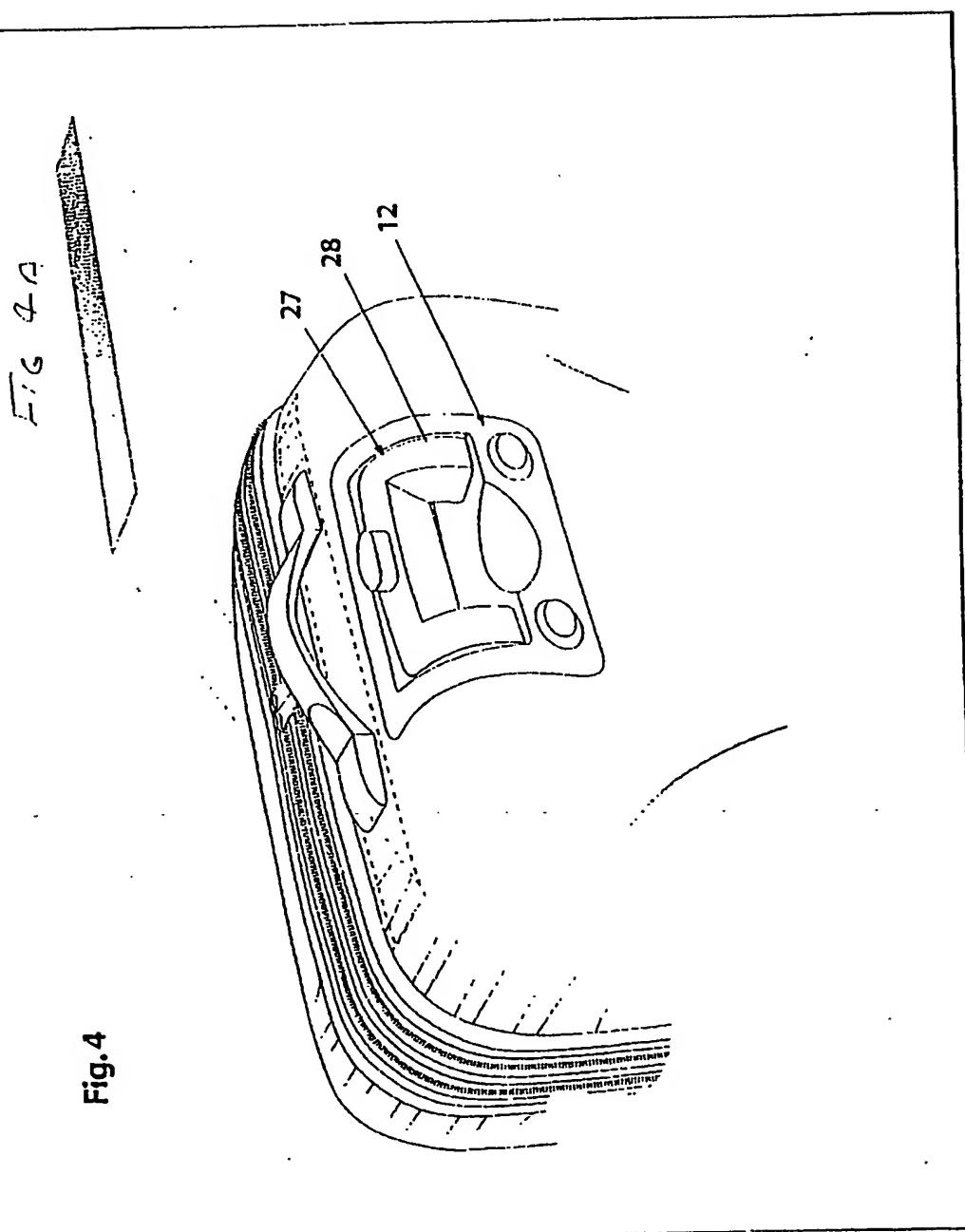
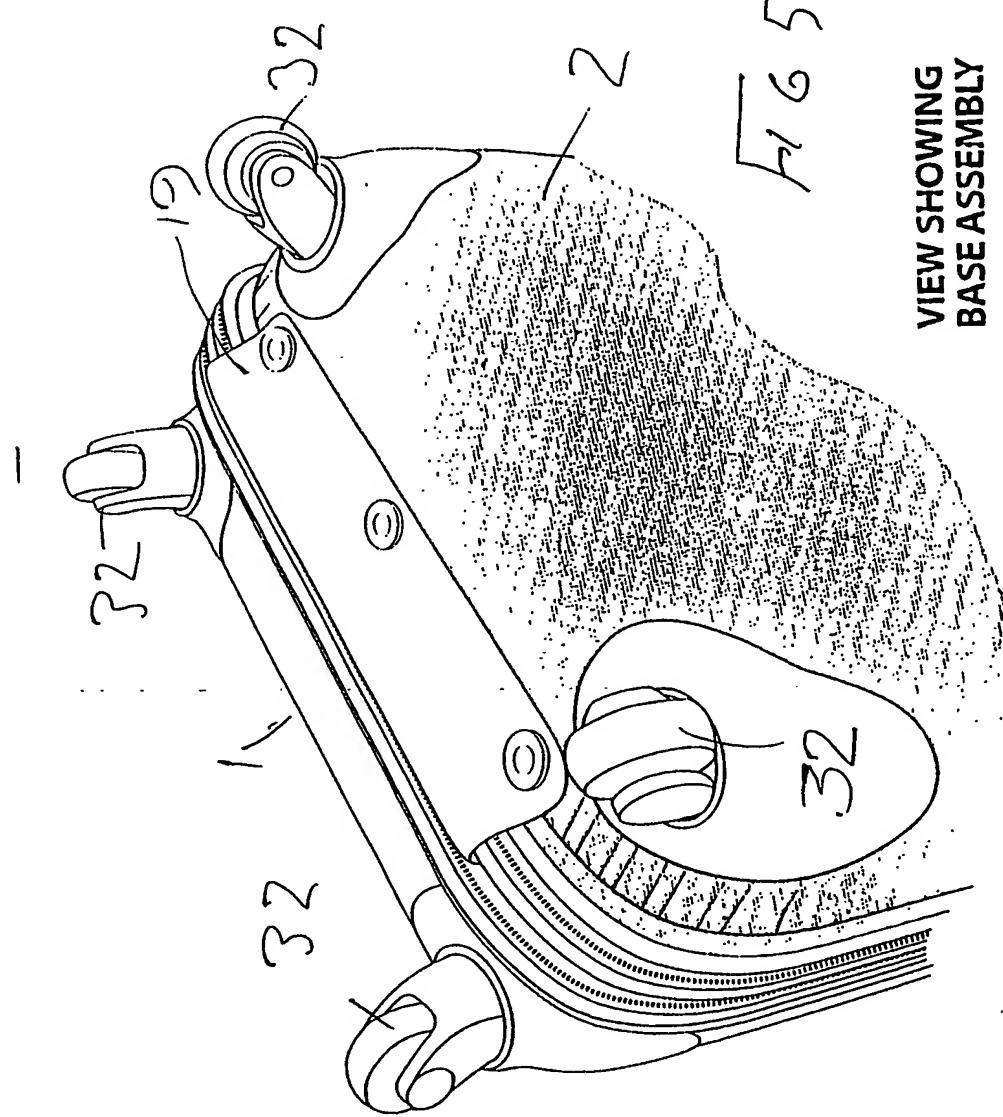


Fig.4

4/4



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